

being referred to is discussed in the specification in paragraph 22. The media may include, but are not limited to materials in the art known as binders, etc. A very critical step, therefore, is the mixing of the ceramic powder and one or more media to achieve a homogenous mixture, and then building a dental material with this homogenous mixture. The result ensures uniform droplets upon dispensing the mixture onto the platform. Every area/droplet is exactly the same since the mixture being dispensed is the same. The dental material being built is homogenous throughout. This is not the case with regard to *Brodkin et al.* and the method disclosed therein.

In the reference, the dental material is built in layers. There is no discussion of first making a homogenous material comprising the ceramic powder and the media, which is dispensed onto the build platform. As described in column 2 of *Brodkin et al.*, beginning with line 40, "three dimensional printing is used to create a dental restoration by inkjet printing a binder onto selected areas of sequentially deposited layers of powder. Each layer is created by spreading a thin layer of powder over the surface of a powder bed...the individual sliced segments or layers are joined by one or more binders to form the three dimensional structure." In column 4, lines 31-35, *Brodkin et al.* as well states that "an inkjet print head having a plurality of inkjet dispensers is also driven by the stepping motor assembly in the same reciprocal manner so as to follow the motion of the powder head and to selectively produce jets of a liquid binder material at selected regions thereby causing the powdered material at such regions to become bonded...the powder/binder layer forming process is repeated so as to build up the restoration layer by layer." The result of building layer by layer and using an inkjet printer to

dispense a binder into selected areas of sequentially deposited layers of powder to promote binding of the powder particles, is that the different areas will not be uniform as in the product prepared by the process of the claimed invention. Therefore, *Brodkin et al.* cannot anticipate the claimed process, as a specific disclosure of first making a homogeneous mixture of ceramic powder and media (binder) for dispensing is not disclosed in *Brodkin et al.* Rather, the powder and binder are dispensed separately in *Brodkin et al.* as the dental material is built layer by layer. The binder is printed separately from the powder only into selected areas of the powder.

Accordingly, favorable reconsideration and withdrawal of the Examiner's rejection of claims 24-26 and 28 under 35 U.S.C. §102(b) as being anticipated by *Brodkin et al.* are respectfully requested.

The Examiner rejects claim 27 under 35 U.S.C. §103 as being unpatentable over *Brodkin et al.* taken in combination with *Chadwick* (U.S. Patent No. 6,063,314). For the following reasons, however, the Examiner's rejection is most respectfully traversed by Applicants.

For the reasons discussed above, *Brodkin et al.* does not disclose the presently claimed invention. The proposed combination with *Chadwick* in no manner cures the deficiencies.

*Chadwick* discloses a method for replication of shaped articles which involves using a silicone polymer. Nowhere, however, does *Chadwick* suggest or disclose preparing a mixture of a ceramic powder with a media such as a binder, and insuring that that mixture is homogenous, prior to dispensing the mixture onto a build platform to form a dental material. As discussed above, *Brodkin et al.* also does not disclose

such a process. Therefore, the combination of *Brodkin et al.* and *Chadwick* can in no manner suggest to the skilled artisan Applicants' claimed invention, requiring the initial step of creating a homogenous mixture of the ceramic powder and media before dispensing the same onto a build platform.

Accordingly, it is respectfully submitted that claim 27 is not rendered obvious in light of *Brodkin et al.* taken with *Chadwick*. Favorable reconsideration and withdrawal of the Examiner's rejection of claim 27 are therefore respectfully requested.

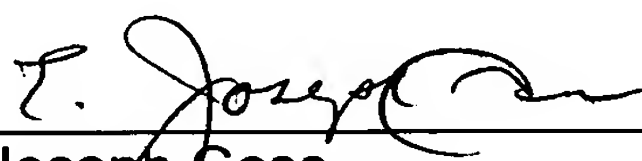
From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited.

Respectfully submitted,

BUCHANAN INGERSOLL PC

Date: December 21, 2005

By:



E. Joseph Gess

Registration No. 28,510

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620